UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HARRINGTON & SMITH, LLP
4 RESEARCH DRIVE
SHELTON, CT 06484-6212

EXAMINER
DUONG, FRANK

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>19 August 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-42</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-42</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is a response to communications dated 08/19/05 and 09/19/05.

Claims 1-42 are pending in the application.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 33-41 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A "computer program", without a computer-readable medium needed to realize the computer program's functionality, is a nonstatutory functional descriptive material or nonstatutory subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Xu et

al (Mobile IP Based Micro Mobility Management Protocol in The Third Generation

Wireless Network, Internet Draft, pages 1-16, November 2000) (hereinafter "Xu").

Regarding **claim 1**, in accordance with Xu reference entirety, Xu discloses a

method to perform a low latency inter-technology handoff of a mobile node (MN) from a

wireless local area network (WLAN) (*Fig. 1; RNN*) to a cellular network (*Fig. 1; PDSN*)

(*see Abstract or Fig. 1 on page 3*), comprising:

transmitting a message from the MN to the WLAN for use by the cellular network,

the message comprising information for use in establishing at least one access bearer

with the cellular network for an ongoing packet data session of the MN (*page 4, section*

4.1 and thereinafter, it is disclosed "In a cdma2000 network, the mobile node initiates a

connection by sending a call setup indication to the RNN across the radio network.

When this indication is received by a RNN, a Registration Request will be sent from the

RNN to the PDSN to setup a new RP session"); and

responding to the receipt of the message with a Router Advertisement message

that is forwarded towards the MN (*page 4, section 4.1 and thereinafter, it is disclosed*

"When a Registration Request is received by a PDSN, the information from the Session

Specific Extension (see next section) will be used to identify a RP session. When a

registration is accepted, a GRE tunnel will be created for this Mobile Node". Moreover,

on page 7, section 4.3, it is further disclosed "The registration Reply will be sent by a

PDSN").

Regarding **claim 27**, in accordance with Xu reference entirety, Xu discloses a data communications system comprising a mobile node (MN) (Fig. 1; MN), a wireless local area network (WLAN) (*Fig. 1; RNN*) and a cellular network (*Fig. 1; PDSN*) (*see Abstract or Fig. 1 on page 3*), further comprising:

a transmitter (Fig. 1; MN) for transmitting a message (call setup) from the MN to the WLAN for use by the cellular network, the message comprising information for use in establishing at least one access bearer with the cellular network for an ongoing packet data session of the MN (*page 4, section 4.1 and thereinafter, it is disclosed "In a cdma2000 network, the mobile node initiates a connection by sending a call setup indication to the RNN across the radio network. When this indication is received by a RNN, a Registration Request will be sent from the RNN to the PDSN to setup a new RP session"*); and

a unit (Fig. 1; PDSN) to respond to the receipt of the message with a Router Advertisement message that is forwarded towards the MN (*page 4, section 4.1 and thereinafter, it is disclosed "When a Registration Request is received by a PDSN, the information from the Session Specific Extension (see next section) will be used to identify a RP session. When a registration is accepted, a GRE tunnel will be created for this Mobile Node"*).

4. Claims 1-6, 23, 26-28, 31-34, 37-40 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Purnadi et al (USP 6,708,031) (hereinafter "Purnadi").

Regarding **claim 1**, in accordance with Purnadi reference entirety, Purnadi

discloses a method (Fig. 5) to perform a low latency inter-technology handoff of a

mobile node (501) from a wireless local area network (cdma2000) (*Fig. 1*) to a cellular

network (*GPRS*) (*see Abstract or Figs. 1-2*), comprising:

transmitting a message from the MN to the WLAN for use by the cellular network,

the message (*authentication extension*) comprising information for use in establishing at

least one access bearer with the cellular network for an ongoing packet data session of

the MN (*col. 9, lines 5-15, Purnadi discloses mobile station sends an MIP Registration

Request message to the WGW including the authentication extension in the

Registration request"*); and

responding to the receipt of the message with a Router Advertisement message

that is forwarded towards the MN (*col. 9, lines 16-29, Purnadi discloses AuC sends

back the MIP Registration Reply message having two authentication extensions to the

mobile station via WGW*).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales

discussed above), Purnadi further discloses where the message is piggybacked on

another message (*col. 9, lines 6-8, Purnadi discloses mobile station includes the

authentication extension (message) in the (piggybacked) Registration Request

Message*).

Regarding **claim 3**, in addition to features recited in base claim 1 (see rationales

discussed above), Purnadi further discloses where the message comprises information

expressive of a QoS requirement of at least one ongoing application of the MN (col. 6,

lines 9-11 or it is inherent by Wireless IP Network Standard to include differentiated services behavior indicated in the user's RADIUS profile).

Regarding **claim 4**, in addition to features recited in base claim 1 (see rationales discussed above), Purnadi further discloses wherein the information message comprises information expressive of a unique identity of the MN that is recognizable by the cellular network (*col. 9, lines 10-11 and also see mobile packet zone identifier to GPRS routing area identifier mapping is discussed at col. 6, line 60*).

Regarding **claim 5**, in addition to features recited in base claim 1 (see rationales discussed above), Purnadi further discloses where the message comprises information expressive of parameters to facilitate the creation of a point-to-point protocol state in the cellular network (*col. 10, lines 39-40*).

Regarding **claim 6**, in addition to features recited in base claim 1 (see rationales discussed above), Purnadi further discloses where the message comprises information expressive of parameters to enable establishment of packet filters in the cellular network (*col. 9, lines 28-29, Purnadi discloses security key shared between the mobile station and the AuC. The security key is inherently enable establishment of packet filters in the cellular network*).

Regarding **claim 23**, in addition to features recited in base claim 1 (see rationales discussed above), Purnadi further discloses where the message is sent by the MN in an encrypted form using a shared secret between the MN and a home Authentication, Authorization, Accounting (AAA) function (AuC) of the MN in the cellular network (*col. 9, lines 5-28*).

Regarding **claims 26 and 42**, in addition to features recited in base claim 1 (see

rationales discussed above), Purnadi further discloses where the MN transmits the

message in response to a change in at least one of WLAN-related signal strength,

signal quality and other information (*Routing Area Updated is discussed at col. 6, lines

59-62*).

Regarding **claim 27**, in accordance with Purnadi reference entirety, Purnadi

discloses a data communications system (Figs. 1-5) comprising a mobile node (100;

400 or 501) a wireless local area network (cdma2000) and a cellular network (GPRS),

further comprising:

a transmitter (100; 400 or 501) for transmitting a message (*MIP Registration

Request Message (authentication extension)*) from the MN to the WLAN for use by the

cellular network, the message comprising information for use in establishing at least one

access bearer with the cellular network for an ongoing packet data session of the MN

(*col. 9, lines 5-15*); and

a unit (Fig. 5; WGW) to respond to the receipt of the message with a Router

Advertisement message (MIP Registration Reply Message (authentication extensions)

that is forwarded towards the MN (*col. 9, lines 16-29*).

Regarding **claim 28**, in addition to features recited in base claim 27 (see

rationales discussed above), Purnadi further discloses where the message is

piggybacked on another message (*col. 9, lines 6-8, Purnadi discloses mobile station

includes the authentication extension (message) in the (piggybacked) Registration

Request Message*).

Regarding **claim 31**, in addition to features recited in base claim 27 (see

rationales discussed above), Purnadi further discloses where the message comprises

information expressive of a QoS requirement of at least one ongoing application of the

MN (not explicitly shown; inherent by Wireless IP Network Standard to include

differentiated services behavior indicated in the user's RADIUS profile), a unique

identity of the MN that is recognizable by the cellular network (*col. 9, lines 10-11 and*

also see mobile packet zone identifier to GPRS routing area identifier mapping is

discussed at col. 6, line 60), parameters to facilitate the creation of a point-to-point

protocol state in the cellular network (*col. 10, lines 39-40*), and parameters to enable

establishment of packet filters in the cellular network (*col. 9, lines 28-29, Purnadi*

discloses security key shared between the mobile station and the AuC. The security

key is inherently enable establishment of packet filters in the cellular network).

Regarding **claim 32**, in addition to features recited in base claim 27 (see

rationales discussed above), Purnadi further discloses where the message is received

by a Packet Data Support Node (PDSN) (WGW is corresponding to "PDSN") (*col. 6,*

lines 9-11 and line 48).

Regarding **claims 33-34**, the claims call for a computer program mirrored the

claimed limitations of claims 1-2. Thus, they are rejected by the same rationales

applied to claims 1-2 discussed above.

Regarding **claim 37**, in addition to features recited in base claim 33 (see

rationales discussed above), Purnadi further discloses where the message comprises

information expressive of a QoS requirement of at least one ongoing application of the

MN (not explicitly shown; inherent by Wireless IP Network Standard to include

differentiated services behavior indicated in the user's RADIUS profile), a unique

identity of the MN that is recognizable by the cellular network (*col. 9, lines 10-11 and*

also see mobile packet zone identifier to GPRS routing area identifier mapping is

discussed at col. 6, line 60), parameters to facilitate the creation of a point-to-point

protocol state in the cellular network (*col. 10, lines 39-40*), and parameters to enable

establishment of packet filters in the cellular network (*col. 9, lines 28-29, Purnadi*

discloses security key shared between the mobile station and the AuC. The security

key is inherently enable establishment of packet filters in the cellular network).

Regarding **claims 38-39**, the claims call for a computer program mirror the

claimed limitations of claims 27 and 32. Thus, they are rejected by the same rationales

applied to claims 27 and 32 discussed above.

Regarding **claim 40**, cdma2000 cellular network is depicted in Figure 4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

5. Claims 7-22, 24-25, 29-30, 35-36 and 41are rejected under 35 U.S.C. 103(a) as

being unpatentable over Purnadi in view of Malki et al (Low Latency Handoff in Mobile

IPv4, Internet Draft, pages 1-65, May 2001) (hereinafter "Malki").

Regarding **claims 7-22 and 24-25**, in addition to features recited in base claim 1

(see rationales discussed above), Purnadi fails to further discloses wherein the

message is send in the context of mobile IP messages having Proxy Router Solicitation

Request, Proxy Router Advertisement and HI/HACK messages in a manner as recited

in the claims. However, such limitations lack thereof from Purnadi is well known and

disclosed by Malki.

In accordance with Malki reference entirety, Malki discloses low latency handoffs

in Mobile Ipv4 having the messages of Proxy Router Solicitation Request, Proxy Router

Advertisement (*see Figure 1 on page 14 and the description of message thereat*) and

HI/HACK (*page 23, section 3.4.3*) to support delay-sensitive or real-time services (see

Malki's abstract).

It would have been obvious to those skilled in the art at the time of invention was

made to implement's Malki's teaching into Purnadi to arrive the claimed invention with a

motivation to support delay-sensitive or real-time services (see Malki's abstract).

Regarding **claims 31-32**, in addition to features recited in base claim 27 (see

rationales discussed above), Purnadi fails to further discloses wherein the message is

send in the context of mobile IP messages having Proxy Router Solicitation Request,

Proxy Router Advertisement and HI/HACK messages in a manner as recited in the

claims. However, such limitations lack thereof from Purnadi is well known and

disclosed by Malki.

In accordance with Malki reference entirety, Malki discloses low latency handoffs

in Mobile Ipv4 having the messages of Proxy Router Solicitation Request, Proxy Router

Advertisement (*see Figure 1 on page 14 and the description of message thereat*) and

HI/HACK (*page 23, section 3.4.3*) to support delay-sensitive or real-time services (see

Malki's abstract).

It would have been obvious to those skilled in the art at the time of invention was

made to implement's Malki's teaching into Purnadi to arrive the claimed invention with a

motivation to support delay-sensitive or real-time services (see Malki's abstract).

Regarding **claim 41**, in addition to features recited in base claim 40 (see

rationales discussed above), Purnadi fails to further discloses wherein the message is

send in the context of mobile IP messages having Router Advertisement message

comprising a Mobile Node-Foreign Agent challenge extension message in a manner as

recited in the claim. However, such limitations lack thereof from Purnadi is well known

and disclosed by Malki.

In accordance with Malki reference entirety, Malki discloses low latency handoffs

in Mobile Ipv4 having Router Advertisement message comprising a Mobile Node-

Foreign Agent challenge extension message (*see page 23, first paragraph*) to support

delay-sensitive or real-time services (see Malki's abstract).

It would have been obvious to those skilled in the art at the time of invention was

made to implement's Malki's teaching into Purnadi to arrive the claimed invention with a

motivation to support delay-sensitive or real-time services (see Malki's abstract).

Response to Arguments

6. Applicant's arguments with respect to claims 1-42 have been considered but are

moot in view of the new ground(s) of rejection.

Conclusion

7. The prior/related art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Jawanda (USP 6,243,581).

Pichna et al (USP 6,904,055).

Bertrand et al (USP 6,876,640).

Choi et al, A Fast Handoff Scheme for Packet Data Service in the CDMA 2000

System, IEEE, pages 1747-1753, 2001.

Parikh et al, Seamless Handoff of Mobile Terminal from WLAN to cdma2000

Network, download at

http://www.nokia.com/library/files/docs/Seamless_Handoff_of_Mobile_Terminal_from_

WLAN_to_cdma2000_Network.pdf

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FRANK DUONG
PRIMARY EXAMINER

October 20, 2005